ABSTRACT

A system for purifying exhaust gas generated by an internal combustion engine including a bypass branching out from the exhaust pipe downstream of a catalyst and merging to the exhaust pipe, an adsorber installed in the bypass, a bypass valve member which closes the bypass, and an EGR conduit connected to the bypass at one end and connected to the air intake system for recirculating the exhaust gas to the air intake system. The bypass valve member is opened for a period after engine startup to introduce the exhaust gas such that the adsorber installed in the bypass adsorbs the unburnt HC component in the exhaust gas. The adsorber adsorbs the HC component when the exhaust temperature rises and the adsorbed component is recirculated to the air intake system through the EGR conduit. In the system, the bypass valve is provided at or close to the branching point in the exhaust pipe and a chamber is provided close to the branching point such that the conduit is connected to the bypass at the one end in the chamber. The bypass valve member is combined with an exhaust pipe valve member as a combination valve such that when the bypass valve member closes the bypass, the exhaust pipe valve member opens the exhaust pipe. With the arrangement, the system can effectively prevent the exhaust pipe from being clogged even when a valve for closing a bypass is stuck in the closed position. At the same time, the system can provide a relatively short EGR conduit for recirculating unburnt HC component adsorbed from the adsorber and the adsorption and desorption are conducted optimally.